Press Release

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ASTA Awards Funds for UAMS Prosthetic Devices

The Arkansas Science & Technology Authority (ASTA) has awarded $50,000 in Technology Development Program funds to the Department of Otolaryngology, Facial Restoration Center, at the University of Arkansas for Medical Sciences (UAMS) for its "Alloplastic Thoracic, Head and Neck Reconstruction" project.

Led by L. Daniel Eaton, a staff researcher/inventor, UAMS has patented a new technology that provides for a method of forming prosthetic articles that precisely duplicate the shape of the human body part to provide a precise and comfortable replacement to the body.

The funds will be used to further develop and produce prototype hollow prosthetic devices.

The U.S. market for prosthetic devices is estimated to average 217,000 single breast replacements annually; head and neck reconstruction occurs at between 500 and 800 cases each year.

At present, Eaton is working with the National Center for Toxicological Research (NCTR) to perform animal testing on Silastic prosthetic devices. According to Dan Brand, associate director for Technology Advancement at NCTR, Eaton and UAMS may receive Food and Drug Administration (FDA) approval in about five years.

The funding for UAMS by the Authority was approved during the regularly scheduled March 17 meeting of the Authority's Board of Directors. The terms of the investment pact authorize the Authority to collect up to a five percent (state maximum) royalty from revenues generated by the technology development investment for a maximum period of 10 years.

Unique to this program is a process that allows for a seamless prosthetic device that is formed in one piece, which reduces the risk of seal failure in the event that the prosthetic device is filled with saline, air or some other filler. The process also allows for the incorporation of sealed hollow space within the prosthetic article. Hollow spaces are inherently more lightweight and can more closely replicate the form and function of various body parts. The process by which the material is cured gives the device the property of being compressible while retaining the ability to return to its original shape once pressure has been removed.

The technology also provides for higher quality explants, especially in the areas of eye, ear and nose replacements. The prostheses can be attached to the outer skin using medical adhesives that last about five days per application.

Eaton is one of two individuals in the U.S. and six or seven in the world with the skills and training to develop custom, alloplastic reconstruction prosthetic devices of this nature. Eaton received a masters degree in medical illustration from the University of Cincinnati College of Medicine and a bachelors degree in liberal arts from Arizona State University in Tempe, Az. He has 18 years of experience in the design and manufacture of devices to be utilized as non-implantable and implantable augmentation anatomy for those humans who have experienced ablative invasive surgery due to disease, trauma, birth defects or burns. He has designed and manufactured 20 breast implants/explants, 400 eye/socket replacements, 150 to 180 cheek prostheses, 120 ear replacements and various other anatomy parts.

The Arkansas Science & Technology Authority serves as a statewide funding resource for high quality scientific and technological projects. The Authority endeavors to bring the benefits of science and technology to the people and state of Arkansas through scientific research, technology development, business innovation and education.

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